"Total Eclipse of the Sun, January 22nd, 1898. Observations at Viziadrug.—Part IV. The Prismatic Cameras." By Sir NORMAN LOCKYER, K.C.B., F.R.S. Received December 22, 1900—Read January 17, 1901.

(Abstract.)

The report gives full particulars concerning the 6-inch and 9-inch prismatic cameras which were used during the eclipse, and the results obtained. Twenty-four of the photographs are reproduced. A table is given indicating the wave-lengths and probable origins of the 856 lines which have been measured between D and λ 3663.

The investigation shows the probable presence of both arc and enhanced lines of calcium, chromium, iron, manganese, nickel, strontium, titanium and possibly cobalt, copper, indium, lead, molybdenum, potassium, and rubidium; arc lines of aluminium, barium, carbon, magnesium, sodium, scandium and possibly cerium, lanthanum, lithium, rhodium, and tantalum; enhanced lines of vanadium, and possibly of bismuth, cæsium, gold, ruthenium, selenium, silicium, thallium, tin, tungsten, yttrium, zinc, and zirconium. Hydrogen, helium, and asterium are also present.

No evidence has been found of the presence of antimony, arsenic, cadmium, iridium, mercury, osmium, palladium, platinum, silver or thorium. Further investigations of the coronal rings have led to no definite results regarding their origins.

"Wave-length Determinations and General Results obtained from a Detailed Examination of Spectra photographed at the Solar Eclipse of January 22, 1898." By J. EVERSHED. Communicated by Dr. RAMBAUT, F.R.S. Received December 12, 1900—Read January 17, 1901.

(Abstract.)

In this paper the results are given of a detailed study and measurement of a series of spectra photographed at the eclipse of 1898, with a glass prismatic camera of $2\frac{1}{4}$ inches aperture. Ten exposures were made, all yielding good negatives, in which the great extension in the ultra-violet is a marked feature.

The first two photographs of the series were exposed at 20 seconds and 10 seconds before totality respectively, and are images of the cusp spectrum. They show the Fraunhofer lines with great distinctness, although the latter are much less dark than in the